

We claim:

1. A sensor configuration for use in detecting ink droplets ejected from an ink drop generator, comprising:
  - a sensing element configured to receive a biasing voltage which creates an electric field from the sensing element to the ink drop generator; and
  - a sensing amplifier coupled to the sensing element, whereby the sensing element is imparted with an electrical stimulus when at least one ink droplet is ejected in the presence of the electric field, and thereafter passes in close proximity to the sensing element without substantially contacting the sensing element.
2. A sensor configuration according to claim 1, wherein the sensing element comprises a conductive target loop.
3. A sensor configuration according to claim 2 further comprising a spittoon receptacle for receiving ink droplets ejected from the ink drop generator after the ink droplets pass in close proximity to the target loop.
4. A sensor configuration according to claim 3 further comprising an absorbent material supported inside the spittoon receptacle.
5. A sensor configuration according to claim 4 further comprising an ink solvent impregnated into the absorbent material.
6. A sensor configuration according to claim 2 further comprising an absorbent material for receiving ink droplets ejected from the ink drop generator after the ink droplets pass in close proximity to the target loop.
7. A sensor configuration according to claim 6 further comprising an ink solvent impregnated into the absorbent material.

8. A sensor configuration according to claim 1, wherein the sensing element comprises at least one conductive wall.

9. A sensor configuration according to claim 8 further comprising a spittoon receptacle for receiving ink droplets ejected from the ink drop generator after the ink droplets pass in close proximity to the conductive wall.

10. A sensor configuration according to claim 9 further comprising an absorbent material supported inside the spittoon receptacle.

11. A sensor configuration according to claim 10 further comprising an ink solvent impregnated into the absorbent material.

12. A sensor configuration according to claim 8 further comprising an absorbent material for receiving ink droplets ejected from the ink drop generator after the ink droplets pass in close proximity to the conductive wall.

13. A sensor configuration according to claim 12 further comprising an ink solvent impregnated into the absorbent material.

14. A sensor configuration for use in detecting ink droplets ejected from an ink drop generator, comprising:

an biasing element configured to receive a biasing voltage which creates an electric field from the electrically biasing element to the ink drop generator;

a sensing element; and

a sensing amplifier coupled to the sensing element, whereby the sensing element is imparted with an electrical stimulus when at least one ink droplet is ejected in the presence of the electric field, thereafter passes in close proximity to the biasing element without substantially contacting the biasing element, and thereafter contacts the sensing element.

15. A sensor configuration according to claim 14, wherein the biasing element comprises a conductive loop.
16. A sensor configuration according to claim 15 further comprising a spittoon receptacle for housing the sensing element.
17. A sensor configuration according to claim 16 wherein the sensing element further comprises an absorbent material supported inside the spittoon receptacle.
18. A sensor configuration according to claim 17 further comprising an ink solvent impregnated into the absorbent material.
19. A sensor configuration according to claim 15 wherein the sensing element further comprises an absorbent material.
20. A sensor configuration according to claim 19 further comprising an ink solvent impregnated into the absorbent material.
21. A sensor configuration according to claim 14, wherein the biasing element comprises at least one conductive wall.
22. A sensor configuration according to claim 21 further comprising a spittoon receptacle for housing the sensing element.
23. A sensor configuration according to claim 22 wherein the sensing element further comprises an absorbent material supported inside the spittoon receptacle.
24. A sensor configuration according to claim 23 further comprising an ink solvent impregnated into the absorbent material.

25. A sensor configuration according to claim 21 wherein the sensing element further comprises an absorbent material.

26. A sensor configuration according to claim 25 further comprising an ink solvent impregnated into the absorbent material.

27. A sensor configuration for use in detecting ink droplets ejected from an ink drop generator, comprising:

a conductive absorbent sensing element; and  
a sensing amplifier coupled to the sensing element, whereby the sensing element is imparted with an electrical stimulus when struck by at least one ink droplet ejected from the ink drop generator.

28. A sensor configuration according to claim 27, wherein the sensing element is further configured to receive a biasing voltage which creates an electric field from the sensing element to the ink drop generator.

29. A printing mechanism, comprising:  
a printhead having ink drop generators for selectively ejecting ink; and  
an ink drop sensor for detecting ink droplets ejected from the ink drop generators, comprising:

a sensing element configured to receive a biasing voltage which creates an electric field from the sensing element to the ink drop generator;  
and

a sensing amplifier coupled to the sensing element, whereby the sensing element is imparted with an electrical stimulus when at least one ink droplet is ejected in the presence of the electric field, and thereafter passes in close proximity to the sensing element without substantially contacting the sensing element.

30. A printing mechanism according to claim 29 further comprising a spittoon receptacle for receiving ink droplets ejected from the ink drop generator after the ink droplets pass in close proximity to the sensing element.
31. A printing mechanism according to claim 30 further comprising an absorbent material supported inside the spittoon receptacle.
32. A printing mechanism according to claim 31 further comprising an ink solvent impregnated into the absorbent material.
33. A printing mechanism according to claim 29 further comprising an absorbent material for receiving ink droplets ejected from the ink drop generator after the ink droplets pass in close proximity to the sensing element.
34. A printing mechanism according to claim 33 further comprising an ink solvent impregnated into the absorbent material.
35. A printing mechanism according to claim 29, further comprising:  
a frame;  
a base, coupled to the frame, for supporting print media in a printzone; and  
wherein the sensing element is integral with the base.
36. A printing mechanism according to claim 35, wherein the printhead comprises a full-width printhead which has ink drop generators aligned over at least the entire printzone;
37. A printing mechanism according to claim 36, wherein the sensing element integral with the base extends for a width at least the entire printzone.

38. A printing mechanism, comprising:
  - a printhead having ink drop generators for selectively ejecting ink; and
  - an ink drop sensor for detecting ink droplets ejected from the ink drop generators, comprising:
    - a biasing element configured to receive a biasing voltage which creates an electric field from the biasing element to the ink drop generator;
    - a sensing element; and
    - a sensing amplifier coupled to the sensing element, whereby the sensing element is imparted with an electrical stimulus when at least one ink droplet is ejected in the presence of the electric field, thereafter passes in close proximity to the biasing element without substantially contacting the biasing element, and thereafter contacts the sensing element.
39. A printing mechanism according to claim 38 further comprising a spittoon receptacle for housing the sensing element.
40. A printing mechanism according to claim 39 wherein the sensing element further comprises an absorbent material supported inside the spittoon receptacle.
41. A printing mechanism according to claim 40 further comprising an ink solvent impregnated into the absorbent material.
42. A printing mechanism according to claim 38 wherein the sensing element further comprises an absorbent material.
43. A printing mechanism according to claim 42 further comprising an ink solvent impregnated into the absorbent material.

44. A printing mechanism, comprising:

a printhead having ink drop generators for selectively ejecting ink; and

an ink drop sensor for detecting ink droplets ejected from the ink drop generators, comprising:

a conductive absorbent sensing element; and

a sensing amplifier coupled to the sensing element, whereby the sensing element is imparted with an electrical stimulus when struck by at least one ink droplet ejected from the ink drop generator.

45. A printing mechanism according to claim 44, wherein the sensing element is further configured to receive a biasing voltage which creates an electric field from the sensing element to the ink drop generator.

46. A method of making ink drop detection measurements in a printing mechanism, comprising:

positioning a print media in a printzone;

positioning an ink printhead over the print media in the printzone;

ejecting at least one ink droplet from the printhead onto the print media;

applying an electrical charge to the ink droplet before the droplet contacts the print media; and

sensing a capacitively induced current in a sensor located below the print media in the printzone when the ink droplet contacts the print media on the side of the media opposite the sensor.

47. A method of making drop detection measurements in a printing mechanism according to claim 46, further comprising performing the actions of claim 46 repeatedly as part of an action to print a printhead calibration and test page.

48. A method of making drop detection measurements according to claim 47, further comprising processing the sensed current to determine a characteristic of the ink drops.

49. A method of making drop detection measurements according to claim 48, wherein the characteristic is whether the printhead is ejecting drops.

50. A method of making drop detection measurements according to claim 48, wherein the characteristic is the volume of ejected ink drops.

51. A method of making drop detection measurements according to claim 48, wherein the characteristic is the velocity of the ejected ink drops.

52. A method of making drop detection measurements in a printing mechanism according to claim 46, further comprising performing the actions of claim 46 repeatedly as part of a print job.

53. A method of making drop detection measurements according to claim 52, further comprising processing the sensed current to determine a characteristic of the ink drops.

54. A method of making drop detection measurements according to claim 53, wherein the characteristic is whether the printhead is ejecting drops.

55. A method of making drop detection measurements according to claim 53, wherein the characteristic is the volume of ejected ink drops.

56. A method of making drop detection measurements according to claim 53, wherein the characteristic is the velocity of the ejected ink drops.

57. A method for making drop detection measurements in an printing mechanism, comprising:

- positioning a print media in a printzone;
- passing an ink printhead over the print media in the printzone;
- selectively ejecting ink droplets from the printhead onto the print media;
- pausing the printhead past the end of the printzone over a drop detect sensor when the printhead has finished passing over the print media;
- repositioning the print media in the printzone
- while repositioning the print media in the print zone, eject at least one ink droplet from the printhead;
- passing the ink printhead over the print media in the printzone again;
- while passing the printhead over the print media again, selectively ejecting ink droplets from the printhead onto the print media
- measuring characteristics of the ink droplet with the drop detect sensor.

58. A sensor configuration for use in detecting ink droplets ejected from an ink drop generator, comprising:

- a biasing element configured to receive a biasing voltage which creates an electric field from the biasing element to the ink drop generator;
- a sensing element; and
- a sensing amplifier coupled to the sensing element, whereby the sensing element is imparted with an electrical stimulus when at least one ink droplet is ejected in the presence of the electric field, thereafter passes in close proximity to the sensing element without substantially contacting the sensing element, and thereafter contacts the biasing element.

59. A sensor configuration according to claim 58, wherein the sensing element comprises a conductive loop.

60. A sensor configuration according to claim 59 further comprising a spittoon receptacle for housing the biasing element.

61. A sensor configuration according to claim 60 wherein the sensing element further comprises an absorbent material supported inside the spittoon receptacle.
62. A sensor configuration according to claim 61 further comprising an ink solvent impregnated into the absorbent material.
63. A sensor configuration according to claim 59 wherein the biasing element further comprises an absorbent material.
64. A sensor configuration according to claim 63 further comprising an ink solvent impregnated into the absorbent material.
65. A sensor configuration according to claim 58, wherein the sensing element comprises at least one conductive wall.
66. A sensor configuration according to claim 65 further comprising a spittoon receptacle for housing the biasing element.
67. A sensor configuration according to claim 66 wherein the biasing element further comprises an absorbent material supported inside the spittoon receptacle.
68. A sensor configuration according to claim 67 further comprising an ink solvent impregnated into the absorbent material.
69. A sensor configuration according to claim 65 wherein the biasing element further comprises an absorbent material.

70. A sensor configuration according to claim 69 further comprising an ink solvent impregnated into the absorbent material.